SECTION 6

TUBERCULOSIS, SEXUALLY TRANSMITTED DISEASES, AND ACQUIRED IMMUNE DEFICIENCY SYNDROME

Please refer to Appendix C for the frequencies and rates

that were used in preparation of the charts presented in this section.

Incidence of TB, STDs, and AIDS: Males and Females

Trends in the incidence of tuberculosis, gonorrhea, syphilis, chlamydia, and AIDS in males and females, from 1985 to 1994, are shown graphically in Figure 6.1. Figure 6.2 presents the same data with an expansion of the lower end of the scale to clarify the trends associated with TB, syphilis, and AIDS.

As shown in Table 6.1, the reported incidence of tuberculosis (number of cases per 100,000 population) increased significantly among both males and females in California during the period 1985 to 1994. There appeared to be a decreasing trend after 1992. In 1992, TB incidence peaked at 21.6 per 100,000 males, compared with 12.8 per 100,000 females. By 1994, these rates had dropped to 18.6 and 11.3 in males and females respectively.

The reported incidence of gonorrhea in males in 1985 was 581.2 per 100,000 and 279.0 per 100,000 females. Between 1985 and 1994, it declined significantly for both men and women, falling to 93.9 and 72.3 respectively. Males were twice as likely to have been reported as having gonorrhea in 1985 but were only 30 percent more likely by 1994.

The reported incidence of primary and secondary syphilis (reported cases per 100,000) in 1985 was 25.9 in males and 6.6 in females. By 1988 it had risen to 29.4 per 100,000 males and nearly tripled in females to 17.0 per 100,000. During the following years, as a result of intervention by state and county health departments, it declined to the very low levels reported in 1994 (3.1 and 1.9 per 100,000 in males and females respectively) and the ratio of male to female cases remained between 1.4 and 1.8. The decline between 1985 and 1994 was statistically significant for both males and females.

The reported incidence of chlamydia was 71.3 per 100,000 for males in 1990 and it declined to 69.8 per 100,000 by 1994. In females, the reported incidence was more than four times higher than in males, rising from 325.9 to 347.9 per 100,000 during that period. Thus, chlamydia was the only sexually transmitted disease for which female incidence exceeded that of males. The most common severe complication of chlamydia is Pelvic Inflammatory Disease (4), which may lead to infertility and ectopic pregnancy because of scarring of the fallopian tubes. Infection with chlamydia is most common among women early in their childbearing years.

It is important to note that the incidence of chlamydia reported here is considered to be an

undercount, that approximately three quarters of the female chlamydia infections are not diagnosed and/or not reported. For example, CDC estimated that the true number of chlamydia infections in women, in California, in 1994, was 294,076 (5) while only 56,418 (22.7 percent of that number) were reported. Despite the likely undercounting, the incidence of chlamydia was still four times greater than the incidence of gonorrhea in females as of 1994.

There was an non-significant upward trend in reported chlamydia incidence between 1990 and 1994. However, required reporting of chlamydia began only in 1990, so it is not clear whether the small annual increase in incidence was due to increased awareness of the new reporting law or due to increased occurrence of disease.

The reported incidence of new AIDS cases in males was 19.1 per 100,000 in 1985 and by 1992 it quadrupled to 75.6 per 100,000. From 1992 to 1994 the reported incidence appeared to decline by about 28 percent, to 54.6 per 100,000. In females, AIDS incidence in 1985 was 0.5 per 100,000. It increased twelve-fold to 6.1 per 100,000 in 1993. From 1993 to 1994 it appeared to plateau or even decrease slightly (to 5.5 per 100,000). Overall, there was a significant upward trend in AIDS incidence for both males and females between 1985 and 1994.

The apparent "peaks" in AIDS incidence in males in 1992 and in females in 1993 may be partly an artifact caused by the expanded AIDS case definition introduced in California on January 1, 1993. The expanded case definition resulted in identification of AIDS cases earlier in the course of disease progression and led to increases in the proportion of cases reported for women, intravenous drug users, and African Americans. However, the data also suggest that AIDS incidence did in fact peak or plateau in 1992-1993, although this cannot not be confirmed without additional years of observation (6).

Incidence of TB, the STDs, and AIDS in Females

Tuberculosis

There was a statistically significant upward trend in reported TB incidence for females in California between 1985 and 1994. The trend was significant for all age groups. However, after stratifying by race/ethnicity, the trend was significant only for African American women.

As shown in Figure 6.3, the reported incidence of tuberculosis among women was highest among Asian/Others, varying between 32.6 and 45.3 per 100,000 during the years 1985 and 1994. It was about half as high among Hispanic and African American women (varying between 11.0 and 20.0 per 100,000) and lowest among white women (varying between 2.3 and 3.1 per 100,000). During this period, incidence declined to a low point in 1988 among Asian/Others, increased to a peak in 1991-92, then began to decline again. A similar trend was observable among Hispanic women. However, among African American women there was a steady and statistically significant increase throughout this period, from 11.0 to 15.5 per 100,000.

The age group with the highest reported TB incidence was women ages 65 years and older, among whom incidence varied between 15.4 and 19.6 per 100,000, as shown in Figure 6.4. The lowest level was found among school-aged children (incidence varied between 2.6 and 5.3 per 100,000). There was little difference among the remaining age groups (ages 0-4 years and ages 15-64 years), among whom TB incidence varied between 7.2 and 13.7 per 100,000.

Gonorrhea

There was a statistically significant downward trend in reported gonorrhea incidence for females in California between 1985 and 1994. The trend was significant in all age groups and for women of all race/ethnic groups.

As shown in Figure 6.5, the reported incidence of gonorrhea among African American women declined sharply, from 1,623.4 to 386.8 per 100,000 between 1985 and 1994. However, it remained ten times higher than that of the other race/ethnic groups. Among Hispanics, whites, and Asian/Others it declined from 162.6, 91.7, and 31.7 per 100,000 in 1985 to 32.4, 16.8, and 9.2 per 100,000 in 1994 for these three groups respectively.

As shown in Figure 6.6, reported gonorrhea incidence remained highest among teens and young adults. It fell from 1,106.2 to 365.9 per 100,000 among youths aged 15-24 years. Among young women ages 25-34 it fell from 437.2 to 100.3 per 100,000. Among infants and preschoolers (ages 0-4 years), the incidence of gonorrhea declined from 17.9 to 1.7 per 100,000.

The women most at risk for gonorrhea during the past decade were young African American women. In 1985, gonorrhea incidence per 100,000 African American women was 5,867 for ages 15-24 years and was 2,203 for ages 25-34 years. By 1994 the reported incidence of gonorrhea per 100,000 had dropped to 102 among the younger women, but only to 863 in the second group. (Data not shown).

Primary and Secondary Syphilis

Between 1985 and 1994 there was an overall statistically significant downward trend in reported syphilis incidence for females in California, in all race/ethnic groups, in spite of an upward trend during the early part of this period (1985-1988). The downward trend between 1985 and 1994 was significant only for ages 15-24 years and 55-64 years.

As shown in Figure 6.7 this trend was clearly seen among African American women, among whom the incidence of syphilis first increased more than four-fold between 1985 and 1988, from 36.6 to 158.9 per 100,000, then declined to 16.2 per 100,000 in 1994. Among Hispanics, it increased from 8.8 to 15.3 per 100,000 then declined to 1.3. Among whites, it increased from 2.4 to 4.5 per 100,000 then declined to 0.6 per 100,000. Among Asian/Others, it fell from 1.5 to 0.2 per 100,000.

The age groups most at risk for syphilis were the same as those most at risk for gonorrhea, i.e., young women ages 15-24 and 25-34 years. As shown in Figure 6.8, incidence in these two groups rose from 1985 levels of 19.8 and 13.6 per 100,000 respectively, peaked in 1988/89 at 48.5 and 40.6 per 100,000 respectively, and then fell to nearly equal levels of 4.1-4.7 per 100,000 in 1994.

The women with the highest reported syphilis incidence were young African American women ages 15-24 and ages 25-34, whose syphilis incidence in 1988 reached 430 and 333 per 100,000 respectively. Due to intensive surveillance and control efforts by county health departments and the state STD Control Branch (DHS), the incidence of syphilis was brought down to 1 and 12 per 100,000 respectively by 1994 in these two age groups. As with gonorrhea, at the end of the period the incidence of syphilis in the younger of these two age groups was lower than that of the

older group.

Chlamydia

The reported incidence of female chlamydia, between 1990 and 1994, is shown in Figure 6.9 stratified by race/ethnicity and in Figure 6.10 stratified by age. The reported incidence of chlamydia was over four times higher than the incidence of gonorrhea.

In 1990, the highest chlamydia incidence (cases per 100,000) was found among African American women (383.1), followed by Hispanics (202.5), whites (94.0) and Asian/Others (63.5). By 1994, the reported incidence had risen for African Americans, Hispanics, and Asian/Others (rising to 478.8, 276.0, and 73.3 per 100,000), but was lower in whites (fell to 80.6 per 100,000). As noted above, these rates probably underestimate the true incidence of chlamydia due to customary underdiagnosis and underreporting, plus recency of the requirement that cases be reported.

As with gonorrhea and syphilis, the incidence of chlamydia was highest among young adult women. In 1994, chlamydia incidence per 100,000 for ages 15-24 and 25-34 was 1,740.5 and 427.9 respectively, compared with girls ages 1-4 and 5-14 years (13.5 and 59.2 respectively) and older women ages 45-54, 55-64, and 65+ (32.0, 9.0, and 5.5 respectively).

Acquired Immune Deficiency Syndrome (AIDS)

As shown in Figure 6.11, AIDS incidence in females was consistently highest among African Americans. In 1985, the reported incidence of AIDS among whites, African Americans, Hispanics, and Asian/Others was 0.5, 1.0, 0.4, and 0.1 per 100,000 respectively. It appeared to peak in 1992 for white women at 4.3 per 100,000 and Asian/Other women at 2.2 per 100,000. It peaked in 1993 for Hispanic women at 5.3 per 100,000. Thereafter, AIDS incidence appeared to plateau or decline in these groups, falling to 3.2, 1.2, and 4.7 per 100,000 in 1994 in whites, Asians/Others, and Hispanics respectively. The peak or plateau may be partly due to changes in the AIDS case definition introduced in California in 1993, as noted above. Among African American women, however, AIDS incidence continued to increase, reaching 32.5 per 100,000 in 1994, a rate seven times higher that that of Hispanic women and ten times higher than that of white women.

AIDS incidence in 1985 was less than 1.0 per 100,000 for each age group, as shown in Figure 6.12. Among females between 5 and 64 years old, AIDS incidence increased annually, reaching a peak in 1993. In that year, AIDS incidence was higher among women ages 25-34 years (12.5 per 100,000) and 35-44 years (13.5 per 100,000) compared with females at younger ages (1.4 to 3.1 per 100,000) and older ages (3.4 to 8.3 per 100,000). Among girls under age 5, too few cases were reported each year (less than three cases) to permit calculating an incidence rate. Among women ages 65 and older, AIDS incidence peaked relatively early; it reached 1.4 per 100,000 in 1987, then declined steadily in subsequent years.

Summary of TB, STD, and AIDS Findings

The incidence of TB, syphilis, and gonorrhea were 2 to 4 times higher among males than among females. The incidence of AIDS was almost 40 times greater in males in 1985, but only 10 times greater by 1994. The incidence of chlamydia appeared to be higher in females than males, but the

reported case frequencies may not reflect the true incidence of chlamydia among either males or females. Among females, the incidence rates of AIDS and the other sexually transmitted diseases were highest for women ages 15-34 years and for African American women. The incidence of TB was much higher among Asian/Others.

The secular trends (time-related patterns) for these diseases were similar for males and females during the period covered by this report. Gonorrhea incidence declined dramatically between 1986 and 1994. Syphilis incidence increased annually from 1985 to 1987 then it too decreased dramatically in subsequent years, for both males and females. In contrast, the incidence of TB and AIDS both showed increasing incidence from 1985 to the early 1990s. TB incidence began to decline in 1991-92 and AIDS incidence may have begun to decline in 1992-93. Among females, this decline in AIDS incidence was not seen in African Americans.